Fig. 7. Rice fields in front of the mountains of Kandisun.

The water supply and irrigation

conditions the siting of the villages. Some deep holes—there is a river at Tegurera—support the formation of gardens. Watercourses and springs are dammed to form basins for the fetching of water and for washing purposes. Irrigation canals lead across the fields of vegetables and tobacco. In digging these canals waterskin (E.2343) and foot plough[9], are used. The latter are worked by two men. The foot plough was seen in use down by the Lower Zab on the terraced rice fields. Around the villages of Tegurera and Bakerra grow poplars, walnut trees, a few mulberry and fig trees. The hill sides have occasional growths of low oak. Above these villages lie the vineyards, the crop of which is used for sweet and dried to raisins. Around the villages of Sargalu, Bekka and Tarsalu, which have slightly richer, are big fruit plantations with plums, apricots and mulberries. The domestic animals here goats and cows, pet, fat-tailed sheep, horses and black goats, Pelo, donkeys, fish, and snakes, lizards, turtle doves, fowls and geese. Horses, only, are kept as a luxury and ridden with a curb bit[9]. There are also big, yellow sheep dogs used for hunting (wild pig and bear) Persian greyhounds[9]. At 5 a.m. the goats are driven out of the village from the individual houses by children and old women. During the day the animals grazing on the slopes are guarded by young men. At 6-7 p.m. the animals are driven back

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Fig. 10. Threshing by means of animals driven round the fully-loaded corn. Dogurra.

wooden forks pitch the corn under the animal as it is gradually trodden aside out of reach. The second method employs a machine, *laqlaq*, which can be called a threshing sledge[1], threshing cart[2] or threshing roller, as there is no English term which completely covers the function of the apparatus. It consists of two kidney-shaped side pieces joined above by a cross seat. Between the side pieces, which are studded with big brass nails giving the apparatus a superficial resemblance to an old-fashioned sleigh, two heavy wooden rollers are placed. These are covered by a series of inserted, fan-shaped iron blades whose edges are at right angles to each other[3]. These blades are so placed that the machine runs alternately upon a set whose edges run parallel to the rollers and then upon a set whose edges are at right angles to them. By its pressure and the efforts of the beasts harnessed to it, the threshing machine serves not only to extract the grain from the ears, which is also achieved when the animals are driven round alone on the corn heap, but the transverse iron blades at the same time cut up the straw into chaff.

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According to Hayt[4] the use of a threshing machine is said to be an economic question, that is to say

[84]

it can in general only be employed by the largest and wealthiest farms. Leach, on the other hand, distinguishes between "hill country style", where the animals alone tread out the grain[47] and "plains style" with the use of the threshing apparatus[48]. Fellberg makes geography govern the use in Luristan, as the threshing machine, which he calls "threshing car", is used in the north, and animals alone in the south[49]. So far as could be determined within the area I studied in Southern Kurdistan, the difference in the methods employed was a question of both economy and terrain. In the fields belonging to Sheikh Tahir, the owner of the village of Topzawa, animals alone were used on threshing floors situated at an altitude, whilst the horsedrawn threshing apparatus was preferred in the fields in the flatter country below. However, I did not observe the use of the threshing sleigh on the Sjehrizur plain between Sulaimani and Halabja. After threshing the straw, grain and dust is thrown up against the wind which blows away the dust and lighter chaff, whilst the heavier grain falls back on the threshing floor[50]. The grain is further sifted by the aid of a sieve. The women assist at this work.

The grain is stored at home in large, man-high silos of unburnt clay, *kandi or emde*, placed in a store room[51]. Two forms of silo exist[52]. The one is cylindrical, jar-shaped, standing on a low clay bench, and with large, round stones as feet. The top opening is covered by a flat stone. Below, at the side, there is another opening from which the grain can be extracted. The other type is rectangular, built up from the floor in a corner of the room. Both types are embellished by snake-shaped clay coils with finger prints as a pattern, the rectangular type also being decorated with small fragments of mirror-glass and china. According to Reich[53] this kind of decoration is considered to be a protection against the evil eye. It was said that the rectangular type was made or built up and decorated by the women of the house[54]. The jar-shaped examples are made elsewhere. The grain not used in the village is sewn into a sack of carpeting and taken on donkeys or mules to be sold in the towns. This is the man's job.

The grinding of grain takes place at water mills which I had no opportunity of examining. These mills lie by rivers and larger watercourses; see Leach[55] concerning their construction.

The tobacco fields are ploughed in the middle of June. Ploughing is man's job but can be performed by women also. The plough, *jit*, has a plough-share, *gâsin*, of iron but no curved mouldboard. The sole and beam are in one piece. In the example (E. 2340) that was brought home, the sole and the lowest part of the beam is formed by a natural fork. At the lowest point of the beam a vertical steering bar with a handle, *kevjak*, is inserted. The beam is prolonged by a removable pole to facilitate transportation of the plough when dismantled. It can then be carried on the shoulders of one person or loaded on a donkey. In type the plough is a hoe-plough, described by Glob as a "crook-ard"[56]. Worth calls the type "Krümelpflug" and compares it with the Tripolanese plough[57] known from Attic vases. Further, according to Worth, it is linked with the north-Mesopotamian steppes, and he stresses as characteristic: "Sohle und Pflugbaum aus einem Stück"[58]. In this the Kurdish resembles the Danish ploughs of antiquity from Hesselø and Vebbestrup, and differs from the Turkish plough type which, like the Danish Dreslip-plough, has sole and handle in one piece while the beam or drawbar is inserted in it. A plough like the Kurdish is depicted from Arabia by Niebuhr[59], who calls it "Plough with composite beam", concerning himself with the important fact that it can be dismantled and taken from patch to patch, an effective feature in view of the small field's owned by Kurds. The same point

Fig. 11. Wooden plough from Topuzwa. Sole and lower part of the beam are in one piece. (E. 2340).

is also stressed by Leach[39]. The same type of plough is used in Armenia and not, as might have been expected, the Turkish[40].

The plough is drawn by two animals, ox and donkey or two oxen. They carry on their necks a yoke into which are stuck two sets of wooden sticks wound round with small pieces of felt to stop them galling the necks of the draught animals. The plough's beam is linked with a knob on the yoke by a rope ending in a noose.

The tobacco fields are cross-ploughed. The non-mouldboard plough does not turn the earth, but scratches it in furrows[41]. Working with it the man or woman must often place a foot on the beam at the side of the handle in order to keep the plough in the furrow. Water from watercourses is led in over the tobacco fields through a main channel from which branch, like the teeth of a comb, side channels. These are opened and closed by means of a small earthwork. Tobacco is harvested at the beginning of September. Women with big pieces of canvas round their bodies like an apron—as is the case when transporting corn from the field to the home—pull the green tobacco leaves on long cords by the help of an iron nail. The tobacco leaves are thereafter dried in the sun and pulverized[42]. So far as I could discover the tobacco is not fermented. Pulverized tobacco cannot be rolled for

8: Leach E-5 (1938) 1940 MA11 Kurd MA11
Rowanduz

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Ploughing

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The technical equipment available for land cultivation is extremely rudimentary. The principal implement the plough (see photographs) is of the simplest possible type, though small details of design vary from village to village. The example illustrated comes from the Rayat district. Its great advantage from the cultivator's point of view is its extreme lightness; it can be dismantled easily in a few moments and carried about by one man. This is of great importance where in order to reach some of the plots to be cultivated it may be necessary to ford a stream or climb half way up a mountain. Thus despite its crudity of construction it is doubtful whether any more modern implement could fulfil the special requirements of the environment equally well. In the plains things are different. There in the big wheat areas capital expenditure on large scale mechanical equipment would be well worth while,* but in the hills the individual plots of cultivation are so small and the inclines so steep that a small portable implement is essential.

The disadvantage of the existing hill country plough is its appalling slowness. The chief reason for this is that instrument makes a straight furrow and has no curved plough share to turn the soil over as in the European instrument. Each furrow is thus less than half as wide as that of an instrument which turns the soil over. But here again any immediate modification is difficult. To use the European instrument efficiently the land must be divided up into long rectangular strips so that the ploughman can go up one side and down the other. With a primitive straight furrow plough, such as the Kurdish, the ploughman returns on his own track so that it does not much matter how short is each individual furrow. The typical smallholdings resulting from the use of these different instruments are thus of different shape - with the European plough the typical smallholder's cultivation plot becomes as in France or Germany a long narrow strip; with the primitive instrument the typical plot is nearly square. Even if the existing Kurdish plough were to be improved so as to carry a curved blade, it probably could not usefully be employed without a considerable redistribution of existing land holdings. Thus though educated Kurds, when lamenting the backwardness of their people, tend to deplore most of all the primitive inefficiency of their equipment, it seems to me most

* It is of interest to note that the manufacturers of harvesting machinery seem to be unaware of the existence of Iraq. I discussed the matter with the landlord Agha of Saadowa, a village some twenty miles west of Erbil. He was a rich man with advanced ideas. He said that he was quite prepared to invest several thousand pounds in ploughs and harvesting machinery but that as far as he could discover there was only one firm of machinery makers with agents in Baghdad and they carried no spare parts.

unlikely that there will be any serious modification of the existing type of plough, at any rate in the hill country. 241 407.

Threshing

For threshing the hill people use no instrument at all; the cattle are merely walked round and round on the piled straw until the whole is reduced to a fine chaff and the straw then winnowed with a fork in a light wind (see photographs). The process of threshing takes an immense time, often lasting from July to late October; any drastic change in the economic programme of the village - such as a switch over from rice to tobacco - must as I have shown be dependent on the extent to which this process of threshing can be speeded up.

A circumstance that I find very puzzling is that throughout the plains area, - where the wheat harvest is very large - use is made of a relatively advanced 'threshing machine'. This consists of a horse drawn sled (see photograph) to the underside of which is attached a rotating set of metal blades for mincing up the chaff. The apparatus is very simple and not, one would have thought, unduly expensive. But the curious fact remains that this device is not found in the hill country around Rowandus at all, though its advantages must be well known to all.

The only explanation I could get was that in the hill country the wheat production was not great enough to make the more efficient method worth while; the argument seemed to be that as long as the threshing got finished before the rains came in November it was good enough. Whatever the real reason it seems likely that there must be some modification of existing threshing methods if there is ever any radical extension of the tobacco cultivation.

Land Utilisation

The actual lay-out of the cultivation is primarily determined by the topography of each individual village. Rice, tobacco, fruit and vegetable cultivations are permanently sited, their position being determined by the lay-out of the irrigation system. The wheat on the other hand is worked on a two year cycle as noted already. The diagram map shows roughly the lay-out of cultivation in Walash at the time of my visit. It will be noted that all the fallow lies on one side of the stream and all the (1938) wheat crop on the other. Nothing corresponding to this neat symmetry could be observed in the other villages I visited. It emphasises the fact however that the holdings of individual cultivators are not necessarily all in one place; - in Walash obviously each working group must have approximately an equal area of land on either side of the stream. I thought at first that there might be some system of reallotting land to different individual cultivators in successive years but my informants

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1/ [See page 73 - - Analyst]

8: Leach E-5 (1938) 1940 MA11 Kurd MA11
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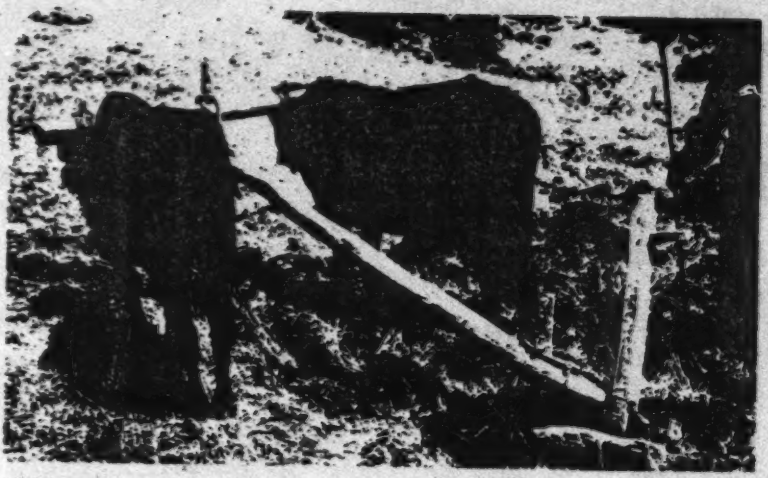

Plate 7.
Plough. Rayat Village.

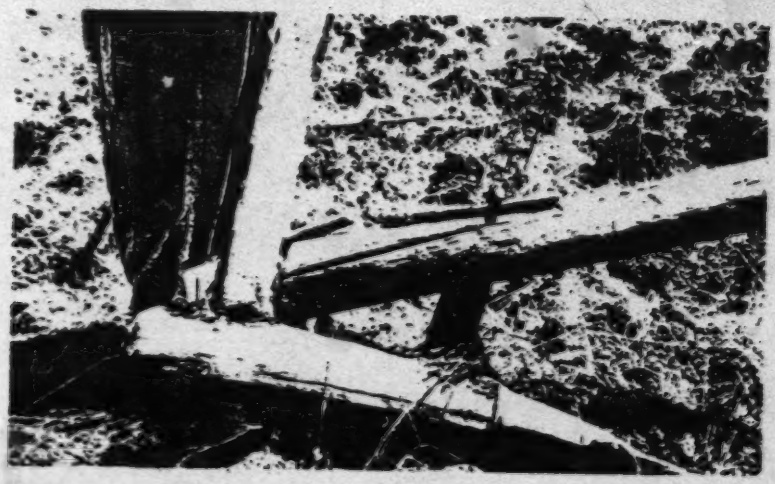

Plate 8.
Plough. Detail. Note the simplicity with which the apparatus can be dismantled.

[Opposite p 74 - D]

8: Leach E-5 (1938) 1940 MA11 Kurd MA11
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Plate 9.
Threshing. Hill country style; Walash Village.

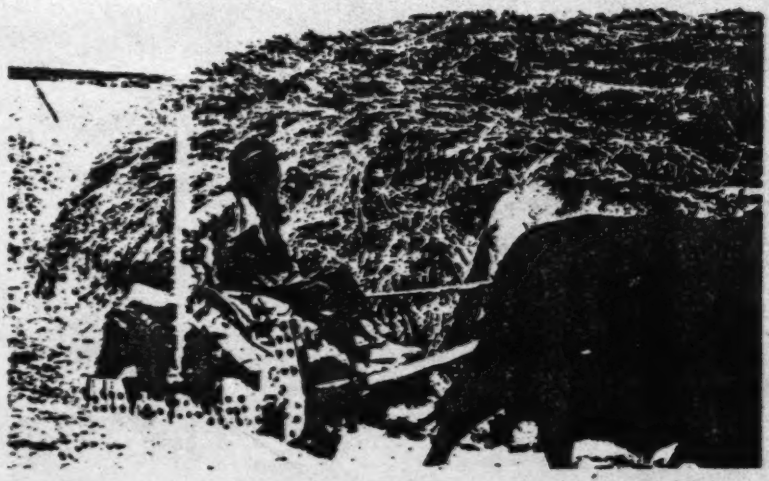

Plate 10.
Threshing. Plains style. (See comments in text.)

[Opposite p 74- E]

11:Johnson G-3 (no date) 1940 MA11 Kurd MA11
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From 'Road Through Kurdistan' *A. M. Hamilton*

A Kurdish plough: as of old it is made from a forked tree, cut with one long limb and one short, to form a wooden hook. This is dragged through the ground by a pair of oxen. The ploughman welcomed the chance of showing off his child

[58 B]